

# WEST Search History





DATE: Monday, March 05, 2007

| Hide?                    | <u>Set Name</u>                 | <u>Query</u>  | <u>Hit Count</u> |
|--------------------------|---------------------------------|---|------------------|
|                          | <i>DB=PGPB; PLUR=YES; OP=OR</i> |   |                  |
| <input type="checkbox"/> | L33                             | (garbage and collect\$4 and reset\$4 and mark and (hierarchical or root)).clm.  | 0                |
| <input type="checkbox"/> | L32                             | (garbage and collect\$4 and reset\$4 and mark and root).clm.  | 0                |
| <input type="checkbox"/> | L31                             | (garbage and collect\$4 and reset\$4 and mark).clm.   | 3                |
| <input type="checkbox"/> | L30                             | (garbage and collect\$4 and reset\$4).clm.  | 16               |
| <input type="checkbox"/> | L29                             | (garbage and collect\$4 and free and space and mark and heap and root).clm.   | 0                |
| <input type="checkbox"/> | L28                             | (garbage and collect\$4 and free and space and mark and heap).clm.  | 2                |
| <input type="checkbox"/> | L27                             | (garbage and collect\$4 and free and space and mark).clm.   | 2                |
| <input type="checkbox"/> | L26                             | (garbage and collect\$4 and free and space and bit and mark).clm.   | 0                |
| <input type="checkbox"/> | L25                             | (garbage and collect\$4 and free and space).clm.  | 19               |
| <input type="checkbox"/> | L24                             | (segment\$1 and object\$1 and garbage and collect\$4 and allocat\$4 and root and space).clm.  | 0                |
| <input type="checkbox"/> | L23                             | (segment\$1 and object\$1 and garbage and collect\$4 and allocat\$4 and root and free).clm.   | 0                |
| <input type="checkbox"/> | L22                             | (segment\$1 and object\$1 and garbage and collect\$4 and allocat\$4 and root).clm.  | 1                |
| <input type="checkbox"/> | L21                             | (segment\$1 and object\$1 and garbage and collect\$4 and allocat\$4).clm.   | 6                |
| <input type="checkbox"/> | L20                             | (segment\$1 and object\$1 and garbage and collect\$4 and lazy).clm.   | 0                |
| <input type="checkbox"/> | L19                             | (segment\$1 and object\$1 and garbage and collect\$4 and single and space).clm.   | 0                |
| <input type="checkbox"/> | L18                             | (segment\$1 and object\$1 and garbage and collect\$4).clm.  | 10               |
| <input type="checkbox"/> | L17                             | (garbage and collect\$4 and heap and mark and allocat\$4 and bit\$1 and enumeration and root and select\$4 and perform\$4 and switch\$3).clm. | 0                |
| <input type="checkbox"/> | L16                             | (garbage and collect\$4 and heap and mark and allocat\$4 and bit\$1 and enumeration and root and select\$4 and perform\$4 and reset\$4).clm.  | 0                |
| <input type="checkbox"/> | L15                             | (garbage and collect\$4 and heap and mark and allocat\$4 and bit\$1 and enumeration and root and select\$4 and perform\$4 and heap).clm..     | 1                |
| <input type="checkbox"/> | L14                             | (garbage and collect\$4 and heap and mark and allocat\$4 and bit\$1 and enumeration and root and select\$4 and perform\$4).clm.               | 1                |
| <input type="checkbox"/> | L13                             | (garbage and collect\$4 and heap and mark and allocat\$4 and bit\$1 and enumeration and root and select\$4 and laz\$3).clm.                   | 0                |
| <input type="checkbox"/> | L12                             | (garbage and collect\$4 and heap and mark and allocat\$4 and bit\$1 and enumeration and root and select\$4).clm.                              | 1                |
| <input type="checkbox"/> | L11                             | (garbage and collect\$4 and heap and mark and allocat\$4 and bit\$1 and enumeration and root).clm.  | 1                |

|                          |     |   |    |
|--------------------------|-----|---|----|
| <input type="checkbox"/> | L10 | (garbage and collect\$4 and heap and mark and allocat\$4 and bit\$1 and enumeration).clm. | 1  |
| <input type="checkbox"/> | L9  | (garbage and collect\$4 and heap and mark and allocat\$4 and bit\$1).clm.                 | 2  |
| <input type="checkbox"/> | L8  | (garbage and collect\$4 and heap and mark and allocat\$4 and segment\$1).clm.             | 0  |
| <input type="checkbox"/> | L7  | (garbage and collect\$4 and heap and mark and allocat\$4).clm.                            | 6  |
| <input type="checkbox"/> | L6  | (garbage and collect\$4 and heap and mark and object\$1 and lazy).clm.                    | 0  |
| <input type="checkbox"/> | L5  | (garbage and collect\$4 and heap and mark and object\$1 and switch\$3).clm.               | 0  |
| <input type="checkbox"/> | L4  | (garbage and collect\$4 and heap and mark and root).clm.                                  | 2  |
| <input type="checkbox"/> | L3  | (garbage and collect\$4 and heap and mark and bit\$1 and allocat\$4).clm.                 | 2  |
| <input type="checkbox"/> | L2  | (garbage and collect\$4 and heap and mark and bit\$1).clm.                                | 4  |
| <input type="checkbox"/> | L1  | (garbage and collect\$4 and heap and mark).clm.   | 17 |

END OF SEARCH HISTORY

# WEST Search History





DATE: Monday, March 05, 2007

| Hide?                    | Set<br>Name | Query  | Hit<br>Count |
|--------------------------|-------------|--|--------------|
|                          |             | <i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>                   |              |
| <input type="checkbox"/> | L134        | L132 and (switch\$3 near5 module\$1)   | 0            |
| <input type="checkbox"/> | L133        | (switch\$3 near5 module\$1)L132  | 47483        |
| <input type="checkbox"/> | L132        | L131 and client\$1   | 1            |
| <input type="checkbox"/> | L131        | L130 and server\$1   | 1            |
| <input type="checkbox"/> | L130        | L129 and (scann\$3 near5 object\$1)  | 2            |
| <input type="checkbox"/> | L129        | L128 and l101  | 3            |
| <input type="checkbox"/> | L128        | (reset\$3 near5 mark) and (allocat\$3 near5 bit\$1) and @py<=2004                | 39           |
| <input type="checkbox"/> | L127        | L126 and segment\$1 and @py<=2004  | 6            |
| <input type="checkbox"/> | L126        | L125 and l101  | 6            |
| <input type="checkbox"/> | L125        | (mark and allocat\$3 and bit and switch\$3 and root and lazy) and @py<=2004      | 160          |
| <input type="checkbox"/> | L124        | (mark and allocat\$3 and bit and switch\$3 and root and lazy).clm. and @py<=2004 | 0            |
| <input type="checkbox"/> | L123        | L122 and module\$1   | 7            |
| <input type="checkbox"/> | L122        | L121 and client\$1 and server\$1   | 26           |
| <input type="checkbox"/> | L121        | L120 and (garbage near5 collect\$4)  | 67           |
| <input type="checkbox"/> | L120        | l112 and (mark or allocation)  | 100          |
| <input type="checkbox"/> | L119        | l112 and 'mark/allocation'   | 0            |
| <input type="checkbox"/> | L118        | l112 and (identified near5 object\$1)  | 0            |
| <input type="checkbox"/> | L117        | l112 and enumeratiion  | 0            |
| <input type="checkbox"/> | L116        | l112 and (bit same lazy)   | 0            |
| <input type="checkbox"/> | L115        | 6598141 .uref.   | 2            |
| <input type="checkbox"/> | L114        | L113 and mark\$3 and @py<=2004   | 6            |
| <input type="checkbox"/> | L113        | L112 and (heap near5 segment\$1)   | 7            |
| <input type="checkbox"/> | L112        | l101 and (scann\$3 near5 object\$1)  | 129          |
| <input type="checkbox"/> | L111        | L109 and (heap near5 segment\$1)   | 0            |
| <input type="checkbox"/> | L110        | L109 and (identif\$4 near5 root)   | 0            |
| <input type="checkbox"/> | L109        | L101 and (lazy same select\$4)   | 24           |
| <input type="checkbox"/> | L108        | L106 and regenerat\$3 and @py<=2004  | 0            |
| <input type="checkbox"/> | L107        | L106 and (regenerat\$3 same switch\$3)   | 0            |
| <input type="checkbox"/> | L106        | l105 and ((root or hierarch\$4) near5 object\$1)                                 | 12           |

|                          |      |  |      |
|--------------------------|------|--|------|
| <input type="checkbox"/> | L105 | L104 and root  | 14   |
| <input type="checkbox"/> | L104 | L103 and (allocat\$3 near5 bit\$1)   | 16   |
| <input type="checkbox"/> | L103 | L102 and (mark near5 bit\$1)   | 27   |
| <input type="checkbox"/> | L102 | L101 and heap  | 528  |
| <input type="checkbox"/> | L101 | L100 or l99 or l98   | 6587 |
| <input type="checkbox"/> | L100 | 717/108,116,118,148,170.ccls.  | 1855 |
| <input type="checkbox"/> | L99  | 711/159,170.ccls.  | 3059 |
| <input type="checkbox"/> | L98  | 707/103R-103y.ccls.  | 1777 |
| <input type="checkbox"/> | L97  | L96 and heap   | 4    |
| <input type="checkbox"/> | L96  | L95 and mark and sweep   | 5    |
| <input type="checkbox"/> | L95  | L93 and lazy   | 50   |
| <input type="checkbox"/> | L94  | L93 and (lazy near5 generat\$4)  | 0    |
| <input type="checkbox"/> | L93  | (multi near5 thread\$3) and java and (garbage near5 collect\$4) and @py<=2004              | 302  |
| <input type="checkbox"/> | L92  | (multi near5 thread\$3) and java and (garbage near5 collect\$4) and @py<=2004L91           | 302  |
| <input type="checkbox"/> | L91  | L90 and sweep  | 3    |
| <input type="checkbox"/> | L90  | L89 and mark   | 4    |
| <input type="checkbox"/> | L89  | L88 and pointer\$1   | 4    |
| <input type="checkbox"/> | L88  | L87 and (divid\$3 near5 heap)  | 4    |
| <input type="checkbox"/> | L87  | L85 and (heap near5 memory)  | 17   |
| <input type="checkbox"/> | L86  | L85 and (heap near5 segment\$1)  | 0    |
| <input type="checkbox"/> | L85  | L84 and lazy   | 99   |
| <input type="checkbox"/> | L84  | java and garbage and collect\$4 and @py<=2004  | 1336 |
| <input type="checkbox"/> | L83  | (lazy near5 generat\$4) and garbage and collect\$3 and @py<=2004                           | 1    |
| <input type="checkbox"/> | L82  | (locat\$3 near5 root) and (lazy near5 generat\$4) and garbage and collect\$3 and @py<=2004 | 0    |
| <input type="checkbox"/> | L81  | (root near5 object\$1) and (mark near5 bit\$1) and lazy and @py<=2004                      | 5    |
| <input type="checkbox"/> | L80  | L79 and lazy   | 0    |
| <input type="checkbox"/> | L79  | L78 and (mark near5 bit\$1)  | 8    |
| <input type="checkbox"/> | L78  | L77 and segment\$1   | 11   |
| <input type="checkbox"/> | L77  | L76 and garbage  | 11   |
| <input type="checkbox"/> | L76  | L75 and memory   | 11   |
| <input type="checkbox"/> | L75  | L74 and root   | 11   |
| <input type="checkbox"/> | L74  | (divid\$3 near5 heap) and (mark near5 sweep) and segment\$1 and @py<=2004                  | 17   |
| <input type="checkbox"/> | L73  | (heap segments) and (mark\$sweep) and @py<=2004  | 2    |
| <input type="checkbox"/> | L72  | L71 and lazy   | 0    |
| <input type="checkbox"/> | L71  | L70 and mark and sweep   | 5    |
| <input type="checkbox"/> | L70  | L68 and (pointer\$1 same address)  | 12   |

|                          |  |     |
|--------------------------|--|-----|
| <input type="checkbox"/> |  |     |
| <input type="checkbox"/> | L69 L68 and lazy   | 0   |
| <input type="checkbox"/> | L68 L63 and (root near5 object\$1)   | 15  |
| <input type="checkbox"/> | L67 L66 and lazy   | 0   |
| <input type="checkbox"/> | L66 L65 and root   | 26  |
| <input type="checkbox"/> | L65 L64 and memory   | 46  |
| <input type="checkbox"/> | L64 L63 and mark   | 46  |
| <input type="checkbox"/> | L63 (heap near5 segment\$1) and (garbage near5 collect\$4) and @py<=2004                   | 70  |
| <input type="checkbox"/> | L62 (heap near5 segment\$1) and root and mark and lazy                                     | 1   |
| <input type="checkbox"/> | L61 L60 and lazy   | 7   |
| <input type="checkbox"/> | L60 L59 and segment\$1   | 107 |
| <input type="checkbox"/> | L59 heap and mark and root and garbage and collect\$4 and @py<=2004                        | 229 |
| <input type="checkbox"/> | L58 heap and segment\$1 and garbage and root and lazy and @py<=2004                        | 0   |
| <input type="checkbox"/> | L57 heap and segment\$1 and enumeration and root and lazy and @py<=2004                    | 0   |
| <input type="checkbox"/> | L56 (heap near5 segment\$1) and lazy and root and @py<=2004                                | 0   |
| <input type="checkbox"/> | L55 (heap near5 segment\$1) and (root near5 object\$1) and lazy and @py<=2004              | 0   |
| <input type="checkbox"/> | L54 (heap near5 segment\$1) and (root near5 object\$1) and (lazy near5 root) and @py<=2004 | 0   |
| <input type="checkbox"/> | L53 L44 and lazy   | 0   |
| <input type="checkbox"/> | L52 L44 and retain\$3  | 0   |
| <input type="checkbox"/> | L51 L44 and scann\$3   | 1   |
| <input type="checkbox"/> | L50 L49 and heap   | 1   |
| <input type="checkbox"/> | L49 L44 and pointer\$1   | 1   |
| <input type="checkbox"/> | L48 L44 and (pointer\$1 same heap)   | 0   |
| <input type="checkbox"/> | L47 L44 and (pointer\$1 near5 heap)  | 0   |
| <input type="checkbox"/> | L46 L44 and resett\$4  | 1   |
| <input type="checkbox"/> | L45 L43 and (root near5 enumeration)   | 0   |
| <input type="checkbox"/> | L44 L43 and root   | 1   |
| <input type="checkbox"/> | L43 6324631.pn.  | 2   |
| <input type="checkbox"/> | L42 L40 and garbage  | 3   |
| <input type="checkbox"/> | L41 L40 and (garbage near5 collect\$4)   | 0   |
| <input type="checkbox"/> | L40 (combin\$3 near5 bit\$1) and (mark bit\$1) and (memory bit\$1) and @py<=2004           | 18  |
| <input type="checkbox"/> | L39 L38 and (allocat\$4 near5 bit)   | 8   |
| <input type="checkbox"/> | L38 (mark bit) and (memory allocation) and @py<=2004                                       | 22  |
| <input type="checkbox"/> | L37 (mark bit) and (allocation bit)  | 4   |
| <input type="checkbox"/> | L36 (mark bit) and (allocation bit) and memory and garbage and collection and @py<=2004    | 0   |
|                          | (mark bit) same (allocation bit) and memory and garbage and collection and                 |     |

|   |     |  |      |
|---|-----|--|------|
| ☐ | L35 | @py<=2004  | 0    |
| ☐ | L34 | L33 and (garbage near5 collect\$4)   | 3    |
| ☐ | L33 | L32 and (memory near5 space)   | 13   |
| ☐ | L32 | (mark near5 bit) same (allocat\$4 near5 bit) and @py<=2004   | 79   |
| ☐ | L31 | 6950838.pn.  | 2    |
| ☐ | L30 | L28 and (heap near5 mark)  | 9    |
| ☐ | L29 | L28 and (heap near5 mark\$bit\$1)  | 0    |
| ☐ | L28 | L26 and (mark near5 bit\$1)  | 27   |
| ☐ | L27 | L26 and (allocat\$3 near5 mark\$bit\$1)  | 0    |
| ☐ | L26 | (mark\$sweep) and (memory near5 allocat\$4) and (garbage near5 collect\$4) and @py<=2004   | 101  |
| ☐ | L25 | L24 and (heap near5 object\$1)   | 7    |
| ☐ | L24 | (allocat\$4 near5 memory) and (allocat\$4 near5 bit\$1) and (mark near5 allocat\$4) and (garbage near5 collect\$4) and @py<=2004 | 15   |
| ☐ | L23 | L22 and root   | 6    |
| ☐ | L22 | L20 and switch\$3  | 6    |
| ☐ | L21 | L20 and (switch\$3 near5 allocat\$4)   | 0    |
| ☐ | L20 | L19 and root and java  | 18   |
| ☐ | L19 | L18 and pointer\$1   | 22   |
| ☐ | L18 | L17 and (object near5 heap)  | 25   |
| ☐ | L17 | L16 and (memory near5 allocat\$4)  | 27   |
| ☐ | L16 | L15 and (mark near5 bit\$1)  | 27   |
| ☐ | L15 | L14 and (mark\$sweep)  | 101  |
| ☐ | L14 | (memory near5 allocat\$4) and (garbage near5 collect\$4) and @py<=2004   | 1232 |
| ☐ | L13 | (mark near5 bit\$1) same (allocat\$3 near bit\$1) and (memory near5 location) and @py<=2004                                      | 7    |
| ☐ | L12 | L11 and root   | 2    |
| ☐ | L11 | L10 and heap   | 6    |
| ☐ | L10 | L9 and object\$1   | 8    |
| ☐ | L9  | L8 and (mark near5 bit)  | 8    |
| ☐ | L8  | L7 and (allocat\$4 near5 bit)  | 22   |
| ☐ | L7  | L6 and (garbage near5 structure)   | 163  |
| ☐ | L6  | (allocat\$4 near5 memory) and (garbage near5 collect\$4) and @py<=2004   | 1232 |
| ☐ | L5  | L4 and (bit near5 pointer\$1)  | 7    |
| ☐ | L4  | L3 and (object\$1 near5 heap)  | 30   |
| ☐ | L3  | L2 and (memory near5 allocat\$4)   | 31   |
| ☐ | L2  | L1 and (mark near5 bit\$1)   | 31   |
| ☐ | L1  | (root near5 object\$1) and java and (garbage near5 collect\$4) and @py<=2004   | 247  |

END OF SEARCH HISTORY

STIC/EIC Search  
10/810, 164

File 8: Ei Compendex(R) 1884-2007/Feb W3  
(c) 2007 Elsevier Eng. Info. Inc.  
File 35: Dissertation Abs Online 1861-2007/Feb  
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File 65: Inside Conferences 1993-2007/Feb 28  
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File 94: JICST-EPlus 1985-2007/Mar W1  
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File 144: Pascal 1973-2007/Feb W3  
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File 434: SciSearch(R) Cited Ref Sci 1974-1989/Dec  
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File 34: SciSearch(R) Cited Ref Sci 1990-2007/Feb W3  
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File 60: ANTE: Abstracts in New Tech & Engineer 1966-2007/Feb  
(c) 2007 CSA.  
File 239: Mathsci 1940-2007/Mar  
(c) 2007 American Mathematical Society

| Set | Items  | Description   |
|-----|--------|---|
| S1  | 20770  | GARBAGE(2N)COLLECT? OR MEMOR??? (2N) (MANAG? OR RECLAM??? OR RECLAMATION)   |
| S2  | 0      | MARK(2W)HEAP OR MARKHEAP  |
| S3  | 95     | (MARK OR MARKER OR MARKING)()BIT? ?   |
| S4  | 343    | (ALLOCATION OR ALLOCATING)()BIT? ?  |
| S5  | 478822 | (SINGLE OR SINGULAR OR SOLITARY OR INDIVIDUAL OR ONE OR LO-NE)(3N)(SPACE? ? OR AREA? ? OR REGION? ? OR SEGMENT? ? OR BLO-CK? ? OR FRAGMENT? ? OR CELL? ? OR ZONE? ? OR LOCATION? ? OR PLACE? ?) |
| S6  | 78754  | JAVA OR JVM OR VIRTUAL()MACHINE? ?  |
| S7  | 6      | (ROOT()SET? ?)(5N)(ENUMERAT? OR COUNT??? OR CALCULAT? OR D-ERIV? OR COMPUTE OR COMPUTES OR COMPUTED OR COMPUTING)   |
| S8  | 869    | (SELECTIV? OR CONDITION?)(5N)(IDENTIF? OR RECOGNIZ? OR REC-OGNIS? OR DETECT? OR FIND??? OR DISCOVER?)(5N)(HEAD OR ROOT OR PARENT OR TOP)  |
| S9  | 10406  | (MARK??? OR LABEL???? OR ASSIGN?)(5N)(HEAD OR ROOT OR PARE-NT OR TOP)   |
| S10 | 21     | S1 AND S3   |
| S11 | 0      | S1 AND S4   |
| S12 | 356    | S1 AND S5   |
| S13 | 1840   | S1 AND S6   |
| S14 | 3      | S1 AND S7   |
| S15 | 0      | S1 AND S8   |
| S16 | 17     | S1 AND S9   |
| S17 | 2      | S10 AND S12   |
| S18 | 42     | S13 AND S12   |
| S19 | 214925 | (FREE OR EMPTY OR UNALLOCATED OR OPEN)(3N)(SPACE? ? OR ARE-A? ? OR REGION? ? OR SEGMENT? ? OR BLOCK? ? OR FRAGMENT? ? OR CELL? ? OR ZONE? ? OR LOCATION? ? OR PLACE? ?)                         |
| S20 | 131    | S1 AND S19  |
| S21 | 6      | S5 AND S20  |
| S22 | 11     | S14 OR S17 OR S21   |
| S23 | 28     | S16 OR S22  |

File 348:EUROPEAN PATENTS 1978-2007/ 200708

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File 349:PCT FULLTEXT 1979-2007/UB=20070222UT=20070215

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| Set | Items  | Description  |
|-----|--------|--|
| S1  | 11562  | GARBAGE(2N)COLLECT? OR MEMOR??? (2N) (MANAG? OR RECLAM??? OR RECLAMATION)  |
| S2  | 9      | MARK(2W)HEAP OR MARKHEAP   |
| S3  | 582    | (MARK OR MARKER OR MARKING)()BIT? ?  |
| S4  | 401    | (ALLOCATION OR ALLOCATING)()BIT? ?   |
| S5  | 559209 | (SINGLE OR SINGULAR OR SOLITARY OR INDIVIDUAL OR ONE OR LO-NE) (3N) (SPACE? ? OR AREA? ? OR REGION? ? OR SEGMENT? ? OR BLO-CK? ? OR FRAGMENT? ? OR CELL? ? OR ZONE? ? OR LOCATION? ? OR -PLACE? ?) |
| S6  | 22381  | JAVA OR JVM OR VIRTUAL()MACHINE? ?   |
| S7  | 9      | (ROOT()SET? ?) (5N) (ENUMERAT? OR COUNT??? OR CALCULAT? OR D-ERIV? OR COMPUTE OR COMPUTES OR COMPUTED OR COMPUTING)  |
| S8  | 853    | (SELECTIV? OR CONDITION?) (5N) (IDENTIF? OR RECOGNIZ? OR REC-OGNIS? OR DETECT? OR FIND??? OR DISCOVER?) (5N) (HEAD OR ROOT OR PARENT OR TOP)   |
| S9  | 14966  | (MARK??? OR LABEL???? OR ASSIGN?) (5N) (HEAD OR ROOT OR PARE-NT OR TOP)  |
| S10 | 0      | (ROOT()SET? ?) (5N) DERIV???   |
| S11 | 41     | (SELECTIV? OR CONDITION?) (5N) IDENTIFYING(5N) (HEAD OR ROOT -OR PARENT OR TOP)  |
| S12 | 6      | S1(100N)S2   |
| S13 | 1      | S2(100N)S6   |
| S14 | 0      | S3(10N)S4  |
| S15 | 32     | S1(50N)S3:S4   |
| S16 | 104    | S5(100N)S3:S4  |
| S17 | 11     | S1(100N)S5(100N)S3:S4  |
| S18 | 36     | S1:S2(100N)S7:S11  |
| S19 | 0      | S2(100N)S7:S11   |
| S20 | 5      | S1(100N)(S7:S8 OR S11)   |
| S21 | 1      | S3:S4(100N)S9(100N)S1  |
| S22 | 24     | S12:S13 OR S17 OR S20:S21  |
| S23 | 24     | IDPAT (sorted in duplicate/non-duplicate order)  |

File 347:JAPIO Dec 1976-2006/Oct(Updated 070201)

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File 350:Derwent WPIX 1963-2006/UD=200713

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| Set | Items  | Description  |
|-----|--------|--|
| S1  | 12674  | GARBAGE(2N)COLLECT? OR MEMOR??? (2N) (MANAG? OR RECLAM??? OR RECLAMATION)  |
| S2  | 0      | MARK(2W)HEAP OR MARKHEAP   |
| S3  | 254    | (MARK OR MARKER OR MARKING)()BIT? ?  |
| S4  | 217    | (ALLOCATION OR ALLOCATING)()BIT? ?   |
| S5  | 372100 | (SINGLE OR SINGULAR OR SOLITARY OR INDIVIDUAL OR ONE OR LO-NE) (3N) (SPACE? ? OR AREA? ? OR REGION? ? OR SEGMENT? ? OR BLO-CK? ? OR FRAGMENT? ? OR CELL? ? OR ZONE? ? OR LOCATION? ? OR -PLACE? ?) |
| S6  | 6520   | JAVA OR JVM OR VIRTUAL()MACHINE? ?   |
| S7  | 2      | (ROOT()SET? ?) (5N) (ENUMERAT? OR COUNT??? OR CALCULAT? OR D-ERIV? OR COMPUTE OR COMPUTES OR COMPUTED OR COMPUTING)  |
| S8  | 943    | (SELECTIV? OR CONDITION?) (5N) (IDENTIF? OR RECOGNIZ? OR REC-OGNIS? OR DETECT? OR FIND??? OR DISCOVER?) (5N) (HEAD OR ROOT OR PARENT OR TOP)   |
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| S11 | 15     | S1 AND S3:S4   |
| S12 | 4      | S11 AND S5:S9  |
| S13 | 812    | S1 AND S5  |
| S14 | 272    | S1 AND S6  |
| S15 | 2      | S1 AND S7  |
| S16 | 2      | S1 AND S8  |
| S17 | 17     | S1 AND S9  |
| S18 | 13     | S1 AND S5 AND S6   |
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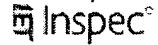
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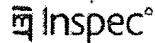
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## Julian Dunn's Journal » Java Virtual Machine Tuning under JVM 1.4.2

These are all taken from Sun's [<http://java.sun.com/docs/hotspot/gc1.4.2> Tuning **Garbage Collection** with the 1.4.2 Java **Virtual Machine**] document. ...

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must allow **allocation** and **garbage collection** requests to be sent directly to the ActiveMemory ... in **mark-sweep**, **mark-sweep** with 2-bit reference counting, ...ieeexplore.ieee.org/iel5/7755/27366/01217230.pdf - [Similar pages](#)**[PDF] Garbage collector memory accounting in language-based systems ...**

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In particular, we expect that it would map well to **mark- ... allocation** errors but still exercise the **garbage collector** suf- ...ieeexplore.ieee.org/iel5/8543/27002/01199342.pdf - [Similar pages](#)**Tuning Garbage Collection with the 5.0 Java[tm] Virtual Machine**One strength of the J2SE platform is that it shields the developer from the complexity of memory **allocation** and **garbage collection**. ...java.sun.com/docs/hotspot/gc5.0/gc\_tuning\_5.html - 91k - [Cached](#) - [Similar pages](#)**[PDF] Garbage Collection Without Paging**File Format: PDF/Adobe Acrobat - [View as HTML](#)When the heap fills, BC typically performs **mark-sweep garbage collection**. ... Simple generational **garbage collection** and fast **allocation**. ...www.cs.umass.edu/~emery/pubs/f034-hertz.pdf - [Similar pages](#)**[PDF] Mostly Concurrent Garbage Collection Revisited**File Format: PDF/Adobe Acrobat - [View as HTML](#)object and checking the **mark bit** of each referent object. (each child). If the **mark bit** ... active **allocation** cache. If this **bit** is set, then the **collector** ...

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Runs of zeros in the **bit allocation** table 538 are now identified; ... Firstly, if the **mark** phase of the **garbage collection** was run (step 1055) then the ...

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**Garbage Collection**. Three Techniques. **Mark** and Sweep; Stop and Copy; Reference Counting ... The objects with a **mark bit** 1 have their **mark bit reset** to 0 ...

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with its **mark bit** set, the **collection** does not really gain anything from this ... objects on the **allocation** cache (i.e., before **resetting** the "in active ...

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which are live, the **mark** is **reset** in preparation for the next cycle. However, this simple sweep results in a ... The 32-bit **garbage collection** information ...

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the **allocation** cache (i.e., before **resetting** the "in active cache" bits of the ... However, our base ("naive") **collector** keeps a **mark-bit** table for which a ...

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ery switching roles and with all forwarding pointers being **reset**. ... **mark-sweep garbage collection**. In H. G. Baker, editor, ...

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**bit** in the object header. In addition, to optimize cache locality we ... **Allocation** and **Garbage Collection** Times." In Proceedings ...

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the top of the heap is **reset**. If the active heap is one fourth of the total heap ... "Simple Generational **Garbage Collection** and Fast **Allocation**." ...

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'Fwd: Our changes to KHTML and KJS' - **MARC**

Fixed tables to **reset** the font to the <body> font and not to the default ... This greatly reduces the number of objects the **garbage collector** needs to deal ...  
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Free item distribution among multiple free lists during **garbage** ...

**Garbage collector** 206 may perform **garbage collection** using **mark** and sweep phases, ...  
Previous Patent (Memory **allocation** using mask-bit pattern . ...  
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### Incremental garbage collection

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US Pat. 6353838 - Filed Jun 27, 2001 - Microsoft Corporation

INCREMENTAL GARBAGE COLLECTION RELATED APPLICATIONS This application is a ...  
used and reclaiming the memory to satisfy future memory allocation requests. ...

### System and method for hard real-time garbage collection requiring a write barrier but no read barrier

US Pat. 5293614 - Filed Apr 8, 1991 - Texas Instruments Incorporated

During garbage collection objects are moved from condemned region 352 into one  
of the ... Each object 1-5, at its allocation, will include a mark word 1000, ...

### Local allocation buffers for parallel garbage collection

US Pat. 6826583 - Filed Oct 25, 2000 - Sun Microsystems, Inc.

"A Scalable Mark-Sweep Garbage Collector on Large-Scale Shared-Memory Machines",  
... "Simple Generational Garbage Collection and Fast Allocation," Software: ...

### Adaptive scheduler for mark and sweep garbage collection in interactive systems

US Pat. 6349314 - Filed Sep 29, 1999 - Motorola, Inc.

One such conventional garbage collection algorithm, referred to as mark and ...  
Since memory allocation tends to be unpredictable, it is possible that the ...

### Apparatus and method for assisting exact garbage collection by using a stack cache of tag bits

US Pat. 6101580 - Filed Apr 23, 1997 - Sun Microsystems, Inc.

Dynamic Storage Allocation: A Survey and Critical Review, by Paul R. Wilson et  
... Garbage Collection, Algorithms for Automatic Dynamic Memory Management, ...

### Write barrier system and method for trapping garbage collection page boundary crossing pointer stores

US Pat. 5845298 - Filed Apr 23, 1997 - Sun Microsystems, Inc.

In most programming 35 garbage collection schemes divide the heap into two or  
more languages, heap allocation is required for data structures that ...

### Generation isolation system and method for garbage collection

US Pat. 6098089 - Filed Apr 23, 1997 - Sun Microsystems, Inc.

In most programming languages, heap allocation is required for data structures  
... Garbage collection within a generation can be by copying, mark-sweep, ...

### Dynamic memory space allocation

US Pat. 6360233 - Filed Jun 17, 1999 - U.S. Philips Corporation

United States Patent Houldsworth (54) DYNAMIC MEMORY SPACE ALLOCATION (75) Inventor:  
... One pass real-time generational mark-sweep garbage collection by J. ...

### Method and system for detecting and coalescing free areas during garbage collection

US Pat. 6324631 - Filed Jun 17, 1999 - International Business Machines Corporation

Still more particularly, the present 10 invention relates to mark-sweep garbage

**collection** memory management for object oriented programs within data ...

Method and system for eliminating synchronization between sweep and allocate in a concurrent **garbage** collector

US Pat. 6289360 - Filed Oct 7, 1998 - International Business Machines Corporation

The method according to claim 1, wherein one or more mutator threads intermittently takes on a rôle of **garbage collection**. 18. ...

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Elimination of coloring during object creation for concurrent **garbage collection**    [Sort by relevance](#) | [Sort by date \(new first\)](#) | [Sort by date \(old first\)](#)

US Pat. 6721865 - Filed Apr 10, 2001 - International Business Machines Corporation  
During the transition intervals, the **allocation** color may be either ... GC cycles of the collector include a **mark/trace** phase 62 and a sweep phase 69. ...

Bounded-pause time **garbage collection** system and method including write barrier associated with a source instance of a partially relocated object

US Pat. 5873105 - Filed Jun 26, 1997 - Sun Microsystems, Inc.

Three classical **garbage collection** methods are reference counting, **mark-sweep**, and copying storage reclamation. The first, reference counting, ...

Bounded-pause time **garbage collection** system and method including write barrier associated with source and target instances of a partially relocated object

US Pat. 5873104 - Filed Jun 26, 1997 - Sun Microsystems, Inc.

Three classical **garbage collection** methods are reference counting, **mark-sweep**, and copying storage reclamation. The first, reference counting, ...

Bounded-pause time **garbage collection** system and method including read and write barriers associated with an instance of a partially relocated object

US Pat. 5857210 - Filed Jun 26, 1997 - Sun Microsystems, Inc.

Three classical **garbage collection** methods are reference counting, **mark-sweep**, and copying storage reclamation. The first, reference counting, ...

Method and system for reclaiming unreferenced computer memory space

US Pat. 5321834 - Filed Oct 21, 1993 - Xerox Corporation

Copying collectors are thus incompatible with BACKGROUND OF THE INVENTION  
10 "conservative" **garbage collection**. In conservative col- This invention relates ...

Locating references and roots for in-cache **garbage collection**

US Pat. 6950838 - Filed Apr 17, 2002 - Sun Microsystems, Inc.

Various 10 events may trigger **garbage collection**, for example, **garbage collection** may be triggered during a memory **allocation** step where the amount of ...

Post dump **garbage collection**

US Pat. 6226761 - Filed Sep 24, 1998 - International Business Machines Corporation

The post-dump **garbage collection** mechanism of the present invention preferably utilizes the **mark-sweep garbage collection** scheme. **Allocation** table 302 from ...

Method and apparatus for generational **garbage collection** of a heap memory shared by multiple processors

US Pat. 6199075 - Filed May 30, 1997 - Sun Microsystems, Inc.

However, the 'heap **allocation**' process 150 continues to a '**garbage collection**' procedure 159 if the 'node **allocation**' procedure 153 was unsuccessful. ...

Write barrier system and method including pointer-specific instruction variant replacement

mechanism

US Pat. 5953736 - Filed Apr 23, 1997 - Sun Microsystems, Inc.

**Garbage collection** Because of this difficulty, **garbage collection**, ie, auto-  
within a generation can be by copying, **mark-sweep**, or other matic reclamation ...

Concurrent shared object implemented using a linked-list with amortized node **allocation**

US Pat. 7017160 - Filed Apr 18, 2001 - Sun Microsystems, Inc.

However, for some realizations, a **garbage collection** facility may be ... Deque with  
Amortized Node **Allocation** One embodiment in accordance with the present ...



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Patents 21 - 30 on **mark allocation garbage collection**. (0.14 seconds)

### CPU-controlled garbage-collecting memory module

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US Pat. 5687368 - Filed Jul 22, 1994 - Iowa State University Research Foundation, Inc.  
However, value is a pointer before attempting to **mark** the referenced 15 higher, since **garbage collection** of the youngest generation object. At **allocation** ...

### Method of delaying space allocation for parallel copying garbage collection

US Pat. 6427154 - Filed Aug 2, 2000 - International Business Machines Corporation  
Prior Art 15 **Garbage collection** is the automatic reclamation of com-puter storage. ... as in the **Mark** and Sweep algorithm) and the simplicity of **allocation**. ...

### Lock-free implementation of concurrent shared object with dynamic node allocation and distinguishing pointer value

US Pat. 6826757 - Filed Apr 18, 2001 - Sun Microsystems, Inc.  
Other languages provide analogous facilities for explicit **allocation** and ...  
**Garbage collection** is particularly attractive for languages such as the JAVA™ ...

### Method and system for shadow heap memory leak detection and other heap analysis in an object-oriented environment during real-time trace processing

US Pat. 6658652 - Filed Jun 8, 2000 - International Business Machines Corporation  
Once all object **allocation** spaces have been checked the process ends. ... At the beginning of **garbage collection** the live counts ...

### Method and apparatus for enhancing data storage efficiency

US Pat. 4989134 - Filed Mar 20, 1987 - Hewlett-Packard Company  
The benefits of a **mark** and sweep collector are that 15 no dead structure can survive a **garbage collection**, data need not be ...

### Measuring the exact memory requirement of an application through intensive use of garbage collector

US Pat. 6898602 - Filed Dec 10, 2002 - Sun Microsystems Inc.  
In one variation, **garbage collection** can be forced by simply calling the **garbage** ... as a conventional memory **allocation** function, without intensive **garbage** ...

### Methods and apparatus for enabling local Java object allocation and collection

US Pat. 6757890 - Filed Dec 28, 2000 - Sun Microsystems, Inc.  
Two commonly used **garbage collection** methods include "**mark** and sweep" ...  
**garbage collection** algorithms allowing faster and better **allocation** of space for ...

### Asynchronous garbage collection

US Pat. 5355483 - Filed Jul 18, 1991 - NeXT Computers  
Since newspace 402 is scanned from the same end that **allocation** first occurred and the scan ... If a **garbage collection** occurs while the situation of FIG. ...

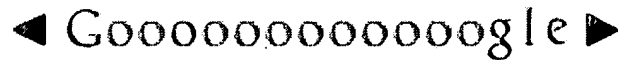
### Apparatus, method, and program for implementing garbage collection suitable for real-time processing

US Pat. 6839726 - Filed Dec 12, 2002 - Matsushita Electric Industrial Co., Ltd.  
The **mark-and-sweep** system is disclosed, for example, in Publication of ...  
The **garbage collection** apparatus comprises: an **allocation** unit operable to ...

Method and apparatus for assisting **garbage collection** process within a java virtual machine

US Pat. 6070173 - Filed Nov 26, 1997 - International Business Machines Corporation

Also note that, in the preferred embodiment, the **garbage collection** ... Finally,  
**mark** bit field 54 is for indicating an active object **allocation** unit. ...



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## Patent results

Patents 31 - 40 on **mark allocation garbage collection**. (0.07 seconds)

### Method for practical concurrent

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#### copying **garbage collection** offering minimal thread block times

US Pat. 6671707 - Filed Oct 19, 1999 - Intel Corporation

Overview of **Allocation** and Copying The **mark** phases above establish which O objects are reachable. Those phases are the primary ones extended to handle Java ...

### Conservative **garbage** collectors that can be used with general memory allocators

US Pat. 7051056 - Filed Sep 13, 2001 - VERITAS Operating Corporation

The **garbage** 55 collector also uses the table in the **mark** phase to make a ...  
in the 65 current heap are collectible, ie, subject to **garbage collection**; ...

### Dynamic memory reclamation without compiler or linker assistance

US Pat. 6125434 - Filed May 19, 1998 - Northrop Grumman Corporation

The time cost of the **mark** step of the **garbage collection** process is proportional  
... wherein an application program sends requests for memory **allocation** and ...

### System and method for memory reclamation

US Pat. 6874074 - Filed Nov 13, 2000 - Wind River Systems, Inc.

Skilled practitioners will appreciate that modifications may be made to allow  
non-atomic memory **allocation**, **garbage collection**, and de-**allocation**, eg, ...

### Method for efficient soft real-time execution of portable byte code computer programs

US Pat. 6081665 - Filed Dec 19, 1997 - Newmonics Inc.

... the implementing step comprising the steps: causing the non-empty **mark**-and-  
... causing the **garbage collection** thread to credit the memory **allocation** ...

### Data processing memory space **allocation** and deallocation arrangements

US Pat. 4121286 - Filed Oct 8, 1976 - Plessey Handel und Investments AG

The **garbage collection** process operates in two phases starting from a state in  
which all the **mark** bits are set, say to zero. The first phase involves the ...

### Dynamic adjustment of **garbage collection**

US Pat. 6065020 - Filed May 27, 1998 - Microsoft Corporation

Two well-known techniques for **garbage collection** are **mark**-and-sweep **garbage** ...  
The **mark**-and-sweep and the copying **garbage collection** techniques have ...

### Thread suspension system and method using trapping instructions

US Pat. 7013454 - Filed Oct 22, 2001 - Sun Microsystems, Inc.

In most programming languages, heap **allocation** 35 is required for data ...

**Garbage collection** is particularly attractive for languages such as the Java™ ...

### System and method for **garbage collection** with ambiguous roots

US Pat. 4907151 - Filed Sep 30, 1988 - Digital Equipment Corporation

A root storage area **Mark** and Sweep **Garbage** Collectors. stores information caned  
hints regarding program ob- One **collection** method that has been used in the ...

Method for using cache prefetch feature to improve **garbage collection** algorithm

US Pat. 6662274 - Filed Jun 20, 2001 - Intel Corporation

The portions that are no longer being used (**garbage**) are identified (collected)  
so that they can be reclaimed for future **allocation**. The **garbage collection** ...



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lazy root garbage collection

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## Patent results

Patents 1 - 6 on **lazy root garbage collection**. (0.09 seconds)

### Process for distributed **garbage collection**

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US Pat. 5819299 - Filed Jun 6, 1996 - Electric Communities  
After generating the identifier at step 525, **garbage** collecting process 500 transmits a **root** request message from the test object to all those objects that ...

### Process for distributed **garbage collection**

US Pat. 5991779 - Filed Sep 14, 1998 - Electric Communities  
After generating the identifier at step 525, **garbage** collecting process 500 transmits a **root** request message from the test object to all those objects that ...

### Generational **garbage** collector with persistent object cache

US Pat. 6567905 - Filed Jan 23, 2001 - Gemstone Systems, Inc.  
The Scavenge **garbage collection** then identifies live objects that are transitively reachable from stack area 62 or **Root** Set 66 or from objects copied to old ...

### Integrating operating systems and run-time systems

US Pat. 6546546 - Filed Nov 24, 1999 - International Business Machines Corporation  
A non **lazy** implementation of instance state sharing remaps a full ... **Garbage Collection** Java uses **garbage collection** to reclaim unused dynamic memory. ...

### Accurately determining an object's lifetime

US Pat. 6795836 - Filed Dec 29, 2000 - International Business Machines Corporation  
Generally, a **garbage collection** algorithm carries out storage management by ...  
**lazy** reference counting reduces the run-time CPU requirements by deferring ...

### Method for reusing temporaries and reclaiming shared memory

US Pat. 5535390 - Filed Jul 22, 1994  
... US patents involving **garbage collection** (reclamation of shared memory) in ... as well as "**lazy**" reference counting schemes, are also inefficient in ...

lazy root garbage collection

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enumeration garbage collection

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## Patent results

Patents 1 - 10 on **enumeration garbage collection**. (0.84 seconds)

System and method for facilitating unmanaged code participation in **garbage collection**      [Sort by relevance](#) | [Sort by date \(new first\)](#) | [Sort by date \(old first\)](#)

US Pat. 6748503 - Filed Jun 27, 2001 - Microsoft Corporation

As part of its participation in **garbage collection**, the unwind component can ...  
no longer desires to participate in **garbage collection** pointer **enumeration**. ...

Methods and apparatus for concurrent **enumeration** of an object reference root set

US Pat. 6978285 - Filed Aug 22, 2002 - Intel Corporation

The term "concurrent **garbage collection** process" as used herein refers to  
a **garbage collection** process employing concurrent root set **enumeration**. ...

### II X CL

US Pat. 7089273 - Filed Aug 1, 2003 - Intel Corporation

2 is an exemplary flow diagram of a high-level process in which a stack trace  
cache is used during root set **enumeration** for **garbage collection** in a managed ...

Manipulating interior pointers on a stack during **garbage collection**

US Pat. 6598141 - Filed Mar 8, 2001 - Microsoft Corporation

**Garbage collection** is particularly attractive to managed or functional languages  
... and does not need to have a **garbage** collector **enumeration** mechanism. ...

### Declarative pinning

US Pat. 6898611 - Filed Jun 4, 2001 - Microsoft Corporation

Dynamic memory management (eg, a **garbage collection** service) is employed ...  
pointers and does not need to have a **garbage** collector **enumeration** mechanism. ...

Method for optimizing creation and destruction of objects in computer programs

US Pat. 6381738 - Filed Jul 16, 1999 - International Business Machines Corporation

A compiler can bypass **garbage collection** of objects with known lifetimes. ...  
A topological sort order **enumeration** of nodes a graph refers to an **enumeration** ...

### Garbage collector for hypermedia systems

US Pat. 4914586 - Filed Nov 6, 1987 - Xerox Corporation

To allow rapid queries or **enumeration** of database entries. B-Tree indices [2]  
are built to map the values of ... which is useful in **garbage collection**. ...

### Java native interface code generator

US Pat. 6066181 - Filed Dec 8, 1997 - Analysis & Technology, Inc.

Enumerations An **enumeration** allows names to be assigned to specific values ...  
proper memory management, including allocation, freeing and **garbage collection**.

### Flexibly deleting objects in a resource constrained environment

US Pat. 6272504 - Filed Apr 9, 1999 - International Business Machines Corporation

25 This invention concerns an inventive **garbage collection** (GC) technique for  
use in systems with ... If O has VF set continue **enumeration** within step 4. b. ...

Method and apparatus for breaking down computing tasks across a network of heterogeneous computer for parallel execution by utilizing autonomous mobile agents

US Pat. 7082604 - Filed Apr 20, 2001 - Mobile Agent Technologies, Incorporated

The term "**garbage collection**" is widely exception will be placed within an array object and ... wherein the command type and function returns an **enumeration** ...

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## Patent results

Patents 1 - 10 on **client server garbage collection**. (0.16 seconds)

**Garbage collection in object oriented databases using transactional cyclic reference counting** [Sort by relevance](#) | [Sort by date \(new first\)](#) | [Sort by date \(old first\)](#)

US Pat. 6363403 - Filed Jun 30, 1999 - Lucent Technologies Inc.

Note that in the **client-server** system, the loganalyzer and **garbage collection** processes are run at the **server** 801. Consequently, some care, must be taken ...

**Garbage collection in an object cache**

US Pat. 6209003 - Filed Jul 17, 1998 - Inktomi Corporation

The World Wide Web is a popular application of the **client/server** computing ...

This process is called "**garbage collection**". **Garbage** collec-tion must be ...

**Garbage collection method for time-constrained distributed applications**

US Pat. 6611858 - Filed Nov 5, 1999 - Lucent Technologies Inc.

10 With regard to **garbage collection**, because objects are automatically ...

manner of the "**client-server**" architecture, where the **server** processes requests ...

**Methods, apparatus, and product for distributed garbage collection**

US Pat. 6081813 - Filed Sep 11, 1998 - Sun Microsystems, Inc.

Accordingly, **server** call processor, **garbage** collec-tor, and reference count for MI component of **client** platform are not active and are therefore presented ...

**Methods, apparatus, and product for distributed garbage collection**

US Pat. 5832529 - Filed Oct 11, 1996 - Sun Microsystems, Inc.

Accordingly, **server** call processor, **garbage** collec-tor, and reference count for MI component of **client** platform are not active-and are therefore presented ...

**Methods, apparatus, and product for distributed garbage collection**

US Pat. 6704756 - Filed May 14, 2001 - Sun Microsystems, Inc.

Accordingly, **server** call processor, **garbage** collec-tor, and reference count for MI component of **client** platform are not active and are therefore presented ...

**Methods, apparatus, and product for distributed garbage collection**

US Pat. 6816875 - Filed Jun 19, 2003

Accordingly, **server** call processor, **garbage** collec-tor, and reference count for MI component of **client** platform are not active and are therefore presented ...

**Methods, apparatus, and product for distributed garbage collection**

US Pat. 6327596 - Filed Jul 27, 1999 - Sun Microsystems, Inc.

Accordingly, **server** call processor 1031, **garbage** collec-tor 1033, and reference count 1035 for MI component 1030 of **client** platform 1000 are not active and ...

**Distributed communications system having garbage collecting virtual processes**

US Pat. 6502109 - Filed Nov 5, 1999 - Lucent Technologies Inc.

10 With regard to **garbage collection**, because objects are automatically ...

manner of the "**client-server**" architecture, where the **server** processes requests ...

**Garbage collector for a virtual heap**

US Pat. 6865657 - Filed Jun 2, 2000 - Sun Microsystems, Inc.

... a database store method, and a **garbage collection** method as described below.

40 FIG. ... FIG. id—A **Client-Server** System with Persistent Store Space FIG. ...

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## Patent results

Patents 31 - 40 on **client server garbage collection**. (0.08 seconds)

### Pledge-based resource allocation system

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US Pat. 6301616 - Filed Apr 11, 1997 - Microsoft Corporation  
During **garbage collection**, all **client** entries for FIGS. ... is extended a  
pledge-based resource allocation system to a **client/server w garbage** collected ( ...

### Manipulating interior pointers on a stack during garbage collection

US Pat. 6598141 - Filed Mar 8, 2001 - Microsoft Corporation  
Amsaleg, L., et al.; "**Garbage Collection** for a **Client-Server** Persistent Object  
Store", ACM Transactions on Computer Systems, vol. 17, No. 3, Aug. 1999, p. ...

### Lease renewal service

US Pat. 6772162 - Filed Nov 6, 2002 - Sun Microsystems, Inc.  
Thus, MI component 525 will not initiate a **garbage collection** cycle to reclaim the  
... 7 preferably includes both **client** components and **server** components. ...

### Interactive debugging system with debug data base system

US Pat. 6938245 - Filed Oct 28, 1998 - Veritas Operating Corporation  
The results of the new query reflect the **garbage collection**. ... 45 Details of  
Web **Server Client** 243: FIGS. 4-8 Web **server client** 243 receives inputs from ...

### Server-determined client refresh periods for dynamic directory services

US Pat. 6016508 - Filed Jul 2, 1997 - Microsoft Corporation  
**SERVER-DETERMINED CLIENT REFRESH PERIODS FOR DYNAMIC DIRECTORY SERVICES FIELD OF**  
... the **server** will likely just force a **garbage collection** to delete the ...

### Server-determined client refresh periods for dynamic directory services

US Pat. 6263367 - Filed Aug 25, 1999 - Microsoft Corporation  
These entries are static in that they persist until the **client** establishing ...  
the **server** will likely just force a **garbage collection** to delete the oldest ...

### Design and implementation of a client/server framework for federated multi-search and update across heterogeneous datastores

US Pat. 6370541 - Filed Sep 21, 1999 - International Business Machines Corporation  
... Returns: to be returned in the **collection**. cursor position array—the array  
where the ... , Exception before **garbage.collection** is done on this class. ...

### Lease renewal service

US Pat. 6237009 - Filed Jun 14, 1999 - Sun Microsystems, Inc.  
25 Accordingly, **server** call processor 1031, **garbage** collec-tor 1033, and reference  
count 1035 for MI component 1030 , of **client** platform 1000 are not active ...

### Lease renewal service

US Pat. 6449648 - Filed Oct 19, 2000 - Sun Microsystems, Inc.  
25 Accordingly, **server** call processor 1031, **garbage** collec-tor 1033, and reference  
count 1035 for MI component 1030 , of **client** platform 1000 are not active ...

Reduction of network **server** loading

US Pat. 6850968 - Filed Mar 23, 2000 - Service Co.


40 **Garbage Collection** The proxy **server** performs a **garbage collection** function.

... The signal transactions shown represent the case where the mail **client** is ...



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## Patent results

Patents 41 - 50 on **client server garbage collection**. (0.06 seconds)

### Reducing the memory footprint of a session duration semispace

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US Pat. 6279012 - Filed Oct 13, 1998 - Oracle Corporation

**Garbage collection** refers to the process of automatically reclaiming memory that is currently ... Before **client** 161 issues any calls to database **server**, ...

### Lease renewal service

US Pat. 6499049 - Filed Sep 19, 2001 - Sun Microsystems, Inc.

Accordingly, **server** call processor 1031, **garbage** collector 1033, and reference count 1035 for MI component 1030 of **client** platform 1000 are not active ...

### Method and system for leasing storage

US Pat. 6263350 - Filed Mar 20, 1998 - Sun Microsystems, Inc.

20 Accordingly, **server** call processor, **garbage** collector, and reference count for MI component of **client** platform are not active and are therefore ...

### Method and system for leasing storage

US Pat. 6728737 - Filed Feb 15, 2002 - Sun Microsystems, Inc.

call processor, an application call processor, a **garbage** collector, and reference components, either platform can act as a **client** or a **server**. ...

### Leasing scheme for data-modifying operations

US Pat. 7065618 - Filed Jun 30, 2003 - Google Inc.

The **garbage collection** approach to storage reclamation offers several ... Instead, a **client** asks master 130 which chunk **server** 120 it should contact. ...

### Delayed delivery of query results or other data from a federated server to a federated client until such information is needed

US Pat. 6466933 - Filed Sep 21, 1999 - International Business Machines Corporation

This method allows for cleanup, 20 before **garbage-collection** is done on this ... a **server** collection, without transmitting any physical data to the **client**. ...

### Method, apparatus, and product for leasing of group membership in a distributed system

US Pat. 6925644 - Filed Jan 31, 2003 - Sun Microsystems, Inc.

Accordingly, **server** call processor 1031, **garbage** collector 1033, and reference count 1035 for MI component 1030 of **client** platform 1000 are not active and ...

### XX X XX

US Pat. 7107419 - Filed Jun 30, 2003 - higher offset considered to have failed

The **garbage collection** approach to storage reclamation offers several ... Instead, a **client** asks master 130 which chunk **server** 120 it should contact. ...

### Object gateway for securely forwarding messages between networks

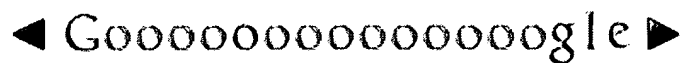
US Pat. 6981265 - Filed Dec 4, 1998 - Hewlett-Packard Development Company, L.P.

Again, there is potential **garbage collection** problem. ... 4 illustrates the basic requirements to allow a **client** 420 and **server** 410 interaction, ...

Methods and apparatus for providing quality of service for legacy applications

US Pat. 6675229 - Filed Nov 29, 1999 - Lucent Technologies Inc.

If r's reference count falls to zero and r's **garbage collection** flag GC is enabled (default), ... the **client/server** protocol used may need to 50 extended, ...



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**garbage** in the title AND **collection and heap** in the title or abstract  
(Results are sorted by date of upload in database)

- 1 Apparatus and method for deterministic garbage collection of a heap memory**  
Inventor: KAAKANI ZIAD M (US); RACHLIN ELLIOTT H (US)    Applicant: HONEYWELL INT INC (US)  
EC:    IPC: **G06F12/00; G06F13/00; G06F12/00 (+1)**  
Publication info: **US2007011415** - 2007-01-11
- 2 Adaptive type-partitioned garbage collection**  
Inventor: ROHRS CHRISTOPHER HENRY (US)    Applicant: HEWLETT PACKARD DEVELOPMENT CO (US)  
EC:    IPC: **G06F17/30; G06F17/30**  
Publication info: **US7155467** - 2006-12-26
- 3 Generational real-time garbage collection**  
Inventor: BACON DAVID F (US); CHANG PERRY (US); (+2)    Applicant: IBM (US)  
EC:    IPC: **G06F17/30; G06F17/30**  
Publication info: **US2006294165** - 2006-12-28
- 4 Leveraging garbage collection to dynamically infer heap invariants**  
Inventor: SHANKAR AJEET (US); CHILIMBI TRISHUL (US)    Applicant: MICROSOFT CORP (US)  
EC:    IPC: **G06F17/30; G06F17/30**  
Publication info: **US2006265438** - 2006-11-23
- 5 Compact garbage collection tables**  
Inventor: TARDITI DAVID R (US)    Applicant: MICROSOFT CORP (US)  
EC:    IPC: **G06F17/30; G06F17/30**  
Publication info: **US7085789** - 2006-08-01
- 6 System and method for concurrent compacting self pacing garbage collection using loaded value and access barriers**  
Inventor: TENE GIL (US); WOLF MICHAEL A (US)    Applicant: AZUL SYSTEMS INC (US)  
EC:    IPC: **G06F17/30; G06F17/30**  
Publication info: **US2006155791** - 2006-07-13
- 7 System and method for performing garbage collection based on unmanaged memory allocations**  
Inventor: DUSSUD PATRICK H (US); GEORGE CHRISTOPHER S (US); (+1)    Applicant: MICROSOFT CORP (US)  
EC:    IPC: **G06F17/30; G06F17/30**  
Publication info: **US2006085494** - 2006-04-20
- 8 GENERATIONAL GARBAGE COLLECTION METHOD AND GENERATIONAL GARBAGE COLLECTION PROGRAM**  
Inventor: KUROMUSHIYA KENICHI    Applicant: APLIX CORP  
EC:    IPC: **G06F12/00; G06F12/00**  
Publication info: **JP2006039877** - 2006-02-09
- 9 Free item distribution among multiple free lists during garbage collection for more efficient object allocation**  
Inventor: BLANDY GEOFFREY O (US)    Applicant: IBM (US)  
EC: **G06F12/02D2; G06F12/02D2G**    IPC: **G06F12/00; G06F12/00; (IPC1-7): G06F12/00**  
Publication info: **US2005273568** - 2005-12-08
- 10 Assigning sections within a memory heap for efficient garbage collection of large objects**

Inventor: BLANDY GEOFFREY O (US)

Applicant: IBM (US)

EC: G06F12/02D2G4

IPC: **G06F12/00**; **G06F12/00**; (IPC1-7): G06F12/00

Publication info: **US2005273567** - 2005-12-08

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### 11 GARBAGE COLLECTION FOR SMART CARDS

Inventor: TREGER JOERN (DE); PINZINGER ROBERT (DE)

EC: G06F12/02D2G

Publication info: **WO2005093580** - 2005-10-06

Applicant: GIESECKE & DEVRIENT GMBH (DE); TREGER JOERN (DE); (+1)

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/02

### 12 Work stealing queues for parallel garbage collection

Inventor: FLOOD CHRISTINE H (US); DETLEFS DAVID L (US); (+3)

EC: G06F12/02D2G4G

Publication info: **US2005132374** - 2005-06-16

IPC: **G06F9/46; G06F12/02; G06F17/30** (+4)

### 13 Method and system for multiprocessor garbage collection

Inventor: DUSSUD PATRICK H (US)

EC: G06F12/02D2G4

Publication info: **US2005033781** - 2005-02-10

Applicant: MICROSOFT CORP (US)

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/00

### 14 System and method for performing garbage collection on a large heap

Inventor: DUSSUD PATRICK H (US)

EC: G06F12/02D2G4G

Publication info: **US2005235120** - 2005-10-20

Applicant: MICROSOFT CORP

IPC: **G06F12/00; G06F12/02; G06F12/00** (+2)

### 15 Method and system for improving the concurrency and parallelism of mark-sweep-compact garbage collection

Inventor: SUBRAMONEY SREENIVAS (US); HUDSON RICHARD L (US)

EC:

Publication info: **US2005198088** - 2005-09-08

Applicant:

IPC: **G06F17/30; G06F17/30**; (IPC1-7): G06F17/30

### 16 Method for enabling comprehensive profiling of garbage-collected memory systems

Inventor: LIANG SHENG (US); GRARUP STEFFEN (US)

EC: G06F11/34T; G06F12/02D2G

Publication info: **US2004158589** - 2004-08-12

Applicant: SUN MICROSYSTEMS INC (US)

IPC: **G06F11/34; G06F12/02; G06F11/34** (+2)

### 17 Bit vector toggling for concurrent mark-sweep garbage collection

Inventor: SUBRAMONEY SREENIVAS (US); HUDSON RICHARD (US)

EC: G06F12/02D2G4

Publication info: **US2005114413** - 2005-05-26

Applicant:

IPC: **G06F12/02; G06F17/30; G06F12/02** (+2)

### 18 Conservative garbage collectors that can be used with general memory allocators

Inventor: RODRIGUEZ-RIVERA GUSTAVO (US); SPERTUS MICHAEL P (US); (+1)

EC: G06F12/02D2G

Publication info: **US2004139272** - 2004-07-15

Applicant:

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/00

### 19 Optimization of memory usage based on garbage collection simulation

Inventor: COHA JOSEPH A (US); KARKARE ASHISH (US); (+1)

EC: G06F11/34S

Publication info: **EP1349077** - 2003-10-01

Applicant: HEWLETT PACKARD CO (US)

IPC: **G06F11/28; G06F9/44; G06F9/46** (+14)

### 20 Method and system for the garbage collection of shared data

Inventor: BORMAN SAMUEL DAVID (GB); TROTTER

Applicant: IBM (US)

MARTIN JOHN (GB)

EC: G06F12/02D2G

IPC: (IPC1-7): G06F17/30

Publication info: **US2003220952** - 2003-11-27

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Data supplied from the *esp@cenet* database - Worldwide

Approximately **91** results found in the Worldwide database for:  
**garbage** in the title AND **collection and heap** in the title or abstract  
(Results are sorted by date of upload in database)

- 21 Apparatus, method, and program for implementing garbage collection suitable for real-time processing**  
**Inventor:** KAWAMOTO TAKUJI (JP) **Applicant:**  
**EC:** G06F12/02D2G4G **IPC:** *G06F12/00; G06F9/44; G06F9/46* (+6)  
**Publication info:** **US2003140071** - 2003-07-24
  - 22 Combining external and intragenerational reference-processing in a garbage collector based on the train algorithm**  
**Inventor:** GARTHWAITE ALEXANDER T (US) **Applicant:**  
**EC:** G06F12/02D2G4G **IPC:** (IPC1-7): G06F12/00  
**Publication info:** **US2004111447** - 2004-06-10
  - 23 Method and apparatus for performing generational garbage collection in a segmented heap**  
**Inventor:** NAGARAJAN VIJAY G (US); ROCHETTI ROBERT (US); (+1) **Applicant:**  
**EC:** G06F12/02D2G4G **IPC:** *G06F12/00; G06F12/02; G06F17/30* (+4)  
**Publication info:** **US2004003014** - 2004-01-01
  - 24 Garbage collector employing multiple-car collection sets**  
**Inventor:** GARTHWAITE ALEXANDER T (US) **Applicant:**  
**EC:** G06F12/02D2G4G **IPC:** *G06F12/02; G06F12/02; (IPC1-7): G06F12/00*  
**Publication info:** **US2002161792** - 2002-10-31
  - 25 Trace termination for on-the-fly garbage collection for weakly-consistent computer architecture**  
**Inventor:** KOLODNER ELLIOT K (IL); LEWIS ETHAN (IL); (+1) **Applicant:** IBM (US)  
**EC:** G06F11/34T; G06F12/02D2G4 **IPC:** *G06F11/34; G06F12/02; G06F11/34* (+2)  
**Publication info:** **US2002120823** - 2002-08-29
  - 26 CONSERVATIVE GARBAGE COLLECTORS THAT CAN BE USED WITH GENERAL MEMORY ALLOCATORS**  
**Inventor:** RODRIGUEZ-RIVERA GUSTAVO (US); SPERTUS MICHAEL P (US); (+1) **Applicant:** GEODESIC SYSTEMS INC (US); RODRIGUEZ RIVERA GUSTAVO (US); (+2)  
**EC:** G06F12/02D2G **IPC:** *G06F12/02; G06F12/02; (IPC1-7): G06F12/00*  
**Publication info:** **WO0223345** - 2002-03-21
  - 27 METHODS AND APPARATUS FOR OPTIMIZING GARBAGE COLLECTION**  
**Inventor:** WALLMAN DAVID **Applicant:** SUN MICROSYSTEMS INC (US)  
**EC:** G06F9/40; G06F9/42M; (+1) **IPC:** *G06F9/40; G06F9/42; G06F12/02* (+3)  
**Publication info:** **WO02054249** - 2002-07-11
  - 28 Computer system with heap reset**  
**Inventor:** KOLODNER ELLIOT KARL (IL); LEWIS ETHAN (IL); (+3) **Applicant:** IBM (US)  
**EC:** G06F9/46A2M; G06F12/02D2G4 **IPC:** *G06F9/50; G06F12/02; G06F9/46* (+2)  
**Publication info:** **US2002056019** - 2002-05-09
  - 29 Incremental garbage collection**  
**Inventor:** SAUNTRY DAVID M (US); MARKLEY MICHAEL E (US); (+1) **Applicant:** MICROSOFT CORP (US)  
**EC:** G06F12/02D2; G06F12/02D2G4 **IPC:** *G06F12/00; G06F9/45; G06F9/46* (+7)  
**Publication info:** **US2001037336** - 2001-11-01

**30 METHOD AND APPARATUS FOR IMPLEMENTING MODULAR  
GARBAGE COLLECTORS**

**Inventor:** FRESKO NEDIM; LONG DEAN R E; (+1)

**Applicant:** SUN MICROSYSTEMS INC (US)

**EC:** G06F12/02D2G

**IPC:** G06F12/00; G06F9/46; G06F12/02 (+4)

**Publication info:** WO0197042 - 2001-12-20

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## RESULT LIST

70 results found in the Worldwide database for:  
**garbage** in the title AND **collection and heap** in the title or abstract  
(Results are sorted by date of upload in database)

- 31 WORK-STEALING QUEUES FOR PARALLEL GARBAGE COLLECTION**  
Inventor: FLOOD CHRISTINE H; AGESEN OLE; (+3)      Applicant: SUN MICROSYSTEMS INC (US)  
EC: G06F12/02D2G4; G06F12/02D2G4G      IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/00  
Publication info: **WO0188713** - 2001-11-22
- 32 Elimination of coloring during object creation for concurrent garbage collection**  
Inventor: LEWIS ETHAN (IL)      Applicant: IBM (US)  
EC: G06F12/02D2G4      IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/00  
Publication info: **US2002147899** - 2002-10-10
- 33 Manipulating interior pointers on a stack during garbage collection**  
Inventor: DUSSUD PATRICK H (US); MORRISON VANCE P (US)      Applicant: MICROSOFT CORP (US)  
EC: G06F12/02D2G      IPC: **G06F17/13; G06F17/30; G06F17/11** (+2)  
Publication info: **US6598141** - 2003-07-22
- 34 INCREMENTAL CLASS UNLOADING IN A TRAIN-ALGORITHM-BASED GARBAGE COLLECTOR**  
Inventor: GARTHWAITE ALEXANDER T; AGESEN OLE      Applicant: SUN MICROSYSTEMS INC (US)  
EC: G06F9/44M4; G06F12/02D2G4G      IPC: **G06F9/44; G06F12/02; G06F9/44** (+2)  
Publication info: **WO0161472** - 2001-08-23
- 35 Device and method for managing memory resources**  
Inventor: OZAWA TOSHIHIRO (JP); MAEDA MUNENORI (JP)      Applicant:  
EC: G06F12/02D2G2      IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/00  
Publication info: **US2001023478** - 2001-09-20
- 36 On-the-fly garbage collector**  
Inventor: KOLODNER ELLIOT K (IL); PETRANK EREZ (IL)      Applicant: IBM (US)  
EC: G06F12/02D2; G06F12/02D2G4; (+1)      IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/02  
Publication info: **US2001000821** - 2001-05-03
- 37 Striding-type generation scanning for parallel garbage collection**  
Inventor: FLOOD CHRISTINE H (US); DETLEFS DAVID L (US)      Applicant: SUN MICROSYSTEMS INC (US)  
EC: G06F12/02D2G4G      IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F17/30  
Publication info: **US6526422** - 2003-02-25
- 38 Local allocation buffers for parallel garbage collection**  
Inventor: FLOOD CHRISTINE H (US); DETLEFS DAVID L (US); (+1)      Applicant: SUN MICROSYSTEMS INC (US)  
EC: G06F12/02D2G4; G06F12/02D2G4G      IPC: **G06F12/02; G06F17/30; G06F12/02** (+2)  
Publication info: **US6826583** - 2004-11-30
- 39 Efficient object faulting with generational garbage collection**  
Inventor: LEWIS BRIAN T (US); MATHISKE BERND J W (US); (+2)      Applicant: SUN MICROSYSTEMS INC (US)  
EC: G06F9/44M4      IPC: **G06F9/44; G06F9/44**; (IPC1-7): G06F17/30  
Publication info: **US6493730** - 2002-12-10
- 40 REDUCED-COST REMEMBERED-SET PROCESSING IN A TRAIN-ALGORITHM-BASED GARBAGE COLLECTOR**  
Inventor: GARTHWAITE ALEXANDER T; AGESEN OLE      Applicant: SUN MICROSYSTEMS INC (US)

EC: G06F12/02D2G4G

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/02  
(+1)

Publication info: **WO0113239** - 2001-02-22

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## RESULT LIST

70 results found in the Worldwide database for:

**garbage** in the title AND **collection and heap** in the title or abstract

(Results are sorted by date of upload in database)

### 51 INCREMENTAL HEAP EXPANSION IN A REAL-TIME GARBAGE COLLECTOR

Inventor: HELLER STEVE; FLOOD CHRISTINE H

Applicant: SUN MICROSYSTEMS INC (US)

EC: G06F12/02D2G4

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/02

Publication info: **WO9964955** - 1999-12-16

### 52 Method of instrumenting garbage collection generating a trace file making a single pass analysis of object heap

Inventor: BERRY ROBERT FRANCIS (US); BRYANT RAYMOND M (US); (+4)

Applicant: IBM (US)

EC: G06F12/02D2G

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/00

Publication info: **US6434575** - 2002-08-13

### 53 Method for combining card marking with remembered set for generational garbage collection with more than two generations

Inventor: AZAGURY ALAIN (IL); KOLODNER ELLIOT K (IL); (+2)

Applicant: IBM (US)

EC: G06F12/02D2G4G

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F17/30

Publication info: **US6173294** - 2001-01-09

### 54 Dynamic adjustment of garbage collection

Inventor: DUSSUD PATRICK (US)

Applicant: MICROSOFT CORP (US)

EC: G06F12/02D2G

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F17/30

Publication info: **US6065020** - 2000-05-16

### 55 Method and apparatus for generational garbage collection of a heap memory shared by multiple processor units

Inventor: UNGAR DAVID M (US); WOLCZKO MARIO I (US)

Applicant: SUN MICROSYSTEMS INC (US)

EC: G06F12/02D2G4G

IPC: **G06F12/00; G06F9/44; G06F12/02** (+4)

Publication info: **EP0881576** - 1998-12-02

### 56 METHOD AND DEVICE FOR OPTIMIZING ACCURATE GARBAGE COLLECTION OF ARRAY NODE IN CARD HEAP

Inventor: KNIPPEL ROSS C; BEYLIN BORIS

Applicant: SUN MICROSYSTEMS INC

EC: G06F12/02D2G4G

IPC: **G06F12/00; G06F12/02; G06F12/00** (+2)

Publication info: **JP10301837** - 1998-11-13

### 57 A method and apparatus for optimizing exact garbage collection of array nodes in a carded heap

Inventor: WOLCZKO MARIO I (US); UNGAR DAVID M (US)

Applicant: SUN MICROSYSTEMS INC (US)

EC: G06F12/02D2G4G; G06F17/30S3

IPC: **G06F12/00; G06F12/02; G06F12/00** (+2)

Publication info: **EP0874318** - 1998-10-28

### 58 GARBAGE COLLECTION METHOD

Inventor: SHIMURA HIROYA

Applicant: FUJITSU LTD

EC:

IPC: **G06F12/00; G06F12/00**; (IPC1-7): G06F12/00

Publication info: **JP11232162** - 1999-08-27

### 59 Method and apparatus for assisting garbage collection process within a java virtual machine

Inventor: HUBER GARY DOUGLAS (US); MCCAULEY DONALD WILLIAM (US)

Applicant: IBM (US)

EC: G06F12/02D2G

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F17/30

Publication info: **US6070173** - 2000-05-30

**60 Method and apparatus for implementing a write barrier of a garbage collected heap**

**Inventor:** SCHWARTZ DAVID C (US); KNIPPEL ROSS C **Applicant:** SUN MICROSYSTEMS INC (US)  
(US)

**EC:** G06F12/02D2G4G

**IPC:** *G06F12/02*; *G06F12/02*; (IPC1-7): G06F12/00

**Publication info:** **US6049810** - 2000-04-11

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Data supplied from the *esp@cenet* database - Worldwide

## RESULT LIST

4 results found in the Worldwide database for:  
**heap** in the title AND **mark and garbage** in the title or abstract  
(Results are sorted by date of upload in database)

### 1 Computer system with heap and card table

Inventor: BORMAN SAMUEL DAVID (GB); WHARMBY Applicant: IBM (US)

ANDREW DEAN (GB)

EC: G06F12/02D2G4G

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/00  
(+1)

Publication info: **US2003033498** - 2003-02-13

### 2 METHOD AND DEVICE FOR OPTIMIZING ACCURATE GARBAGE COLLECTION OF ARRAY NODE IN CARD HEAP

Inventor: KNIPPEL ROSS C; BEYLIN BORIS

Applicant: SUN MICROSYSTEMS INC

EC: G06F12/02D2G4G

IPC: **G06F12/00; G06F12/02; G06F12/00** (+2)

Publication info: **JP10301837** - 1998-11-13

### 3 Method and apparatus for implementing a write barrier of a garbage collected heap

Inventor: SCHWARTZ DAVID C (US); KNIPPEL ROSS C Applicant: SUN MICROSYSTEMS INC (US)  
(US)

EC: G06F12/02D2G4G

IPC: **G06F12/02; G06F12/02**; (IPC1-7): G06F12/00

Publication info: **US6049810** - 2000-04-11

### 4 COMPUTER SYSTEM FOR CONSERVATIVE STACK AND GENERATIONAL HEAP-GARBAGE COLLECTION AND METHOD THEREOF

Inventor: JIEEMUZU ERU ADOKOTSUKU

Applicant: MICROSOFT CORP

EC: G06F12/02D2G; G06F12/02D2G4G

IPC: **G06F12/00; G06F12/02; G06F12/00** (+2)

Publication info: **JP6095954** - 1994-04-08

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Data supplied from the *esp@cenet* database - Worldwide